



PRODUCT SPECIFICATION

LKA-200 SINGLE LINE TELEPHONE

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1.0 REVISION HISTORY

DATE	REVISION	DESCRIPTION
January 15, 2006	Preliminary Issue 1	Standard version

2.0 GENERAL DESCRIPTION

The LKA-200 is a single-line telephone which primarily intended to be used in PBX, Key System, Hybrid, and Central Office applications. Most of the telephone features provide a solution that meets the necessary requirements.

3.0 FEATURE LISTING

The following features are inclusive of the LKA-200.

- Tone / Pulse signaling
- Flash
- Redial
- Mute
- Ringer melody and volume control

Tone or Pulse signaling - The feature allows the selection of signaling in the Tone (DTMF) or Dial Pulse modes. The tones mode is compliant with DTMF signaling standards

Flash - This feature will provide a temporary, timed disconnect that is used to activate features from the serving network. This feature is activated by pressing the assigned button follow PBX instruction. The time for a Flash is 100 ms.

Redial - The Redial feature is a button feature. It will store the last number dialed, up to 31 digits, and repeat the dialing upon depression of the button. Operation is available in both Tone and Pulse mode. A dialed number will remain in the Redial bin until another number is dialed.

Mute - This feature provides a mute of the transmission. It is assigned to a same button of that P/M button. While the mute is in active, pressing any key button (except '#' button) will disable mute.

Ringer melody and volume control- The Ringer Melody and volume can be adjusted by user. There are three different melodies with high, medium, low and off sound level. See section 5.0 for programming procedure.

4.0 HARDWARE REQUIREMENTS

Each telephone model is comprised of the following major components:

- Baset
- Handset
- Handset cord
- Line cord
- User manual

5.0 PROGRAMMING PROCEDURE

Follows these instructions to program the ringer melody and sound volume:

1. Lift the handset.
2. Press **P/M** button then you can hear beep sound at handset, during this stage your telephone will be automatically muted.
3. Then press **#** button follow by the single number digits to program Ringer melody and sound volume as the follows:
 - '1' Melody 1, Volume Low
 - '2' Melody 1, Volume Medium
 - '3' Melody 1, Volume High
 - '4' Melody 2, Volume Low
 - '5' Melody 2, Volume Medium
 - '6' Melody 2, Volume High (default)
 - '7' Melody 3, Volume Low
 - '8' Melody 3, Volume Medium
 - '9' Melody 3, Volume High
 - '0' Ring sound off

Remark: If digit '0' is programmed, the tone ringer will be turned off until next off-hook where it will automatically return back the last setting before 0.

6.0 ELECTRICAL CHARACTERISTICS

6.1 TRANSMISSION CHARACTERISTICS

6.1.1 Loudness Rating

Transmit, receive and sidetone objective loudness ratings shall be determined in accordance with the requirements of TBR21 standard. Data measure in term of separate numerical ratings for transmit (TOLR), receive (ROLR), and sidetone (SOLR) for each of the following line conditions.

TBR 21

Items	TOLR		ROLR		SOLR	
	Lower	Upper	Lower	Upper	Lower	Upper
2800 Ω	7	- 1	- 4	- 12	5	-
1000 Ω	7	- 1	- 4	- 12	10	-
500 Ω	10	- 1	- 1	- 12	7	-

6.1.2 Telephone noise

Required result: Less than - 60 dB for all conditions.

6.1.3 Receiver noise

Required result: Less than - 85 dB for all conditions.

6.2 NETWORKING SIGNAL CHARACTERISTICS

6.2.1 DTMF Level

DTMF Level generated for each of the two fundamental frequencies under 900 ohm termination at loop current of 20 mA.

Required results:

High-frequency component : -6.5 ~ -10.5 dBm.
Low-frequency component : -8.5 ~ -12.5 dBm.

6.2.2 DTMF Difference (Twist)

The different DTMF level between low frequency component and the high frequency component. Required result: 2 ± 1 dBm.

6.2.3 Frequency Deviation

The accuracy for each of the two fundamental frequencies compare to DTMF frequency table.

Required result: Less than $\pm 1.5\%$

6.2.4 DTMF Signal Duration

Required results:

Signal duration time: More than 65 ms

Inter-digit time : More than 65 ms

6.2.5 DTMF Total Harmonic Distortion

Required result: Less than -20 dB at 20 mA current condition.

6.2.6 Pulse dialing (option)

Required results:

Pulse speed : 10 ± 0.8 pulse per second

Make / Break ratio : 40:60 + 3 % for OJ23 (33:66 for OJ12)

Break resistance: More than 200kohm

Interdigit pause : More than 600 ms

6.2.7 Flash time

Required results: 100, 300, 600 ms (depends on flash jumper option).

6.3 DC CHARACTERISTICS

6.3.1 On-hook DC resistance

Required result: More than 5 Mohm at 200 V dc.

6.3.2 Off-hook DC resistance

Required result: Less than 8 V at 20 mA

6.4 DC CHARACTERISTICS

6.4.1 on-hook AC impedance

Required result:

f < 200 Hz : More than 25 kohm
697 < f < 1,633 Hz : More than 80 kohm
f > 3,200 Hz : More than 60 kohm

6.4.2 off-hook AC impedance

Required result: 400 ~ 1,400 ohm

6.4.3 Return Loss

Required result: More than 10 dB through frequency range 200 ~ 3,200 Hz

6.5 CALL ALERTING CHARACTERISTICS

6.5.1 Minimum Ring Start Voltage

Required result: 20 ~ 40 Vrms at 20 Hz (typical 27 Vrms)

6.5.2 Ring sound level

Required result: (at distance 50 cm for ring signal 20 Hz 70 Vrms)
Maximum level : more than 70 dBspl.

6.5.3 Message Waiting Indicator

Required result: Minimum level 70 Vdc for MWI operation.

6.6 RELIABILITY TEST

6.6.1 Temperature test

Required result:

No operation error occurs during each condition;
1) Setup chamber in 0°C for 12 hours
2) Setup chamber in 40°C at R.H. 85% for 12 hours